

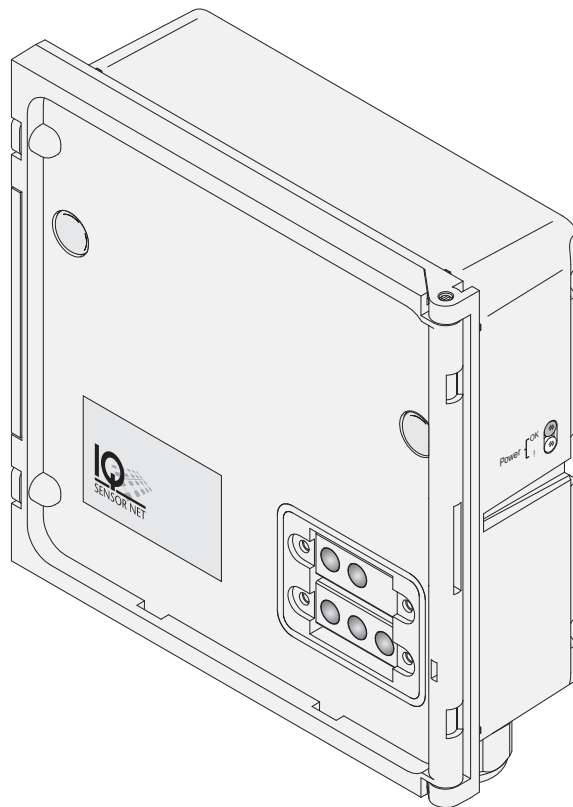


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Operating Manual

# IQ SENSOR NET MIQ/CHV PLUS



**Valve module for compressed air-operated  
sensor cleaning heads**



**Note**

For the most recent version of the manual, please visit [www.ysi.com](http://www.ysi.com).

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## MIQ/CHV PLUS - Contents

<b>1</b>	<b>Overview</b> .....	<b>1-1</b>
<b>2</b>	<b>Safety instructions</b> .....	<b>2-1</b>
2.1	Authorized use .....	2-2
2.2	General safety instructions .....	2-2
<b>3</b>	<b>Installation</b> .....	<b>3-1</b>
3.1	Scope of delivery .....	3-1
3.2	Software requirements .....	3-1
3.3	Mounting for use in the IQ SENSOR NET .....	3-1
3.4	Connecting the valve control line .....	3-2
3.5	Connecting the compressed air hoses .....	3-4
3.6	Function check .....	3-5
<b>4</b>	<b>Settings</b> .....	<b>4-1</b>
4.1	Entering / editing the name of an output .....	4-2
4.2	Linking the output with a sensor .....	4-3
4.3	Deleting a link with an output .....	4-4
4.4	Setting the valve output .....	4-5
4.4.1	<i>Cleaning</i> .....	4-6
4.4.2	<i>Sensor-controlled</i> .....	4-9
4.4.3	<i>Manual control</i> .....	4-10
4.5	Checking the status of the outputs .....	4-11
<b>5</b>	<b>Maintenance and cleaning</b> .....	<b>5-1</b>
5.1	Maintenance .....	5-1
5.2	Cleaning .....	5-1
<b>6</b>	<b>What to do if ...</b> .....	<b>6-1</b>
<b>7</b>	<b>Technical data</b> .....	<b>7-1</b>
<b>8</b>	<b>Indexes</b> .....	<b>8-1</b>
8.1	Explanation of the messages .....	8-1
8.1.1	Error messages .....	8-1
8.1.2	Informative messages .....	8-1
<b>9</b>	<b>Contact Information</b> .....	<b>9-1</b>
9.1	Ordering & Technical Support .....	9-1

9.2 Service Information .....9-1

**10 Accessories and options ..... 10-1**

# 1 Overview

## General characteristics

The MIQ/CHV PLUS valve module provides a switchable compressed air valve for the operation of sensor cleaning heads.

The MIQ/CHV PLUS valve module registers on the IQ SENSOR NET system as an output (V). It appears in the list of outputs and can be linked with a sensor. Thus, the valve is controlled directly by the IQ SENSOR NET.

Alternatively, you can also control the valve via an external switch. The switch can consist of one of the following:

- any relay in the IQ SENSOR NET system
- the relay of a measuring transmitter with the R option
- any other switch (relay or sensor)

The valve module is connected with the external switch via a control line for this.

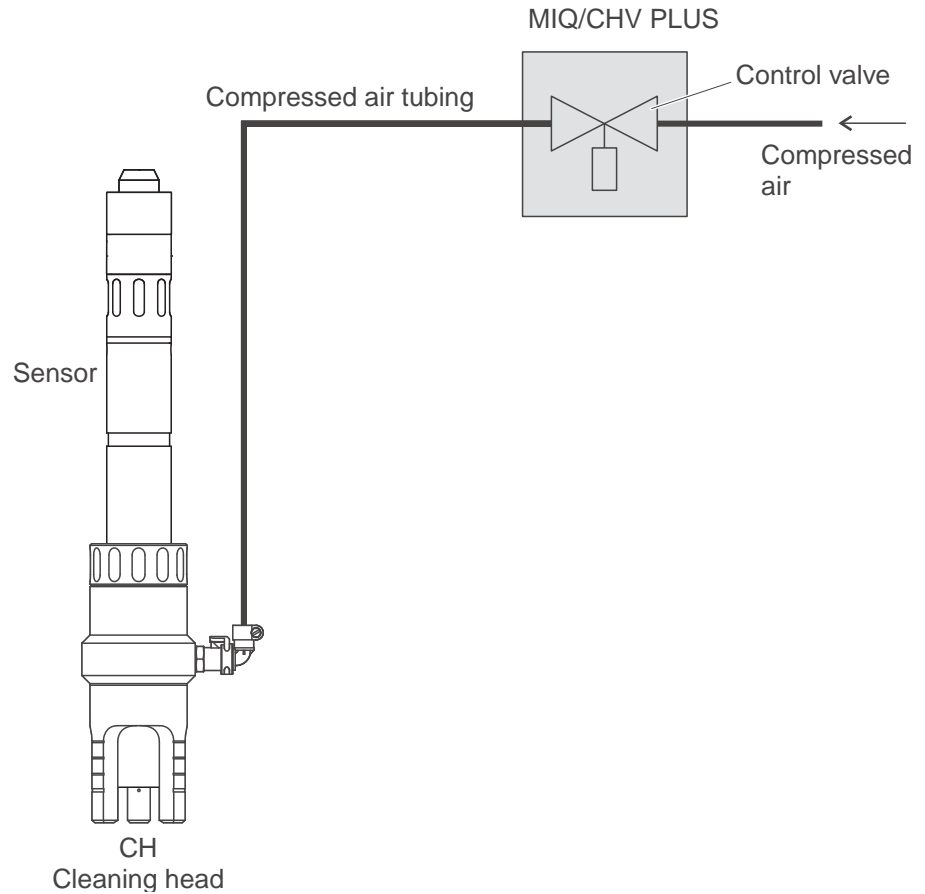


### Warning

**The valve circuit must not supply any unauthorized voltages or currents. It has to be made sure that the circuit at any time meets all requirements of a *Limited circuit* or *Limited Power* as well as of *SELV* (Safety Extra Low Voltage). For more details, see chapter 7 TECHNICAL DATA.**

The following application example shows a cleaning system consisting of the CH cleaning head and a MIQ/CHV PLUS valve module:

**Application example**



*Fig. 1-1 Application example of the MIQ/CHV PLUS valve module:  
Power supply and control line via the IQ SENSOR NET*

**Power supply**

When used in the IQ SENSOR NET, the valve module is supplied with voltage by the IQ SENSOR NET.

**IQ SENSOR NET compatibility**

The MIQ/CHV PLUS can be fully integrated in the IQ SENSOR NET using the MIQ standard module housing.

The housing has the same characteristics as all MIQ modules regarding stability, leakproofness and weather resistance. It also provides the same wide variety of installation options (stacked mounting, canopy mounting, top hat rail mounting, etc.).

**Terminal strip**

The MIQ/CHV PLUS has the following electrical connections on the terminal strip inside the housing:

- 1 x valve circuit connection
- 2 x SENSORNET connection

**Note**

If the valve is controlled via an external switch, only one SENSORNET connection can be used due to the limited number of cable glands. SENSORNET connection 1 or 2 can be selected.





## 2 Safety instructions

This operating manual contains special instructions that must be followed during the installation of the MIQ/CHV PLUS valve module. Thus, it is essential for the operator to read this component operating manual before carrying out any work with the system. Always keep the operating manual in the vicinity of the valve module.

### General safety instructions

Safety instructions in this operating manual are indicated by the warning symbol (triangle) in the left column. The signal word (e.g. "Caution") indicates the danger level:



### Warning

indicates instructions that must be followed precisely in order to prevent serious dangers to personnel.



### Caution

indicates instructions that must be followed precisely in order to avoid slight injuries to personnel or damage to the instrument or the environment.

### Other labels



### Note

indicates notes that draw your attention to special features.



### Note

indicates cross-references to other documents, e.g. operating manuals.

## 2.1 Authorized use

The authorized use of the MIQ/CHV PLUS consists of providing a control valve for compressed air-operated sensor cleaning heads. Please observe the technical specifications according to chapter 7 TECHNICAL DATA. Only operation according to the instructions in this operating manual is authorized.

Any other use is considered to be **unauthorized**. Unauthorized use invalidates any claims with regard to the guarantee.

## 2.2 General safety instructions

The MIQ/CHV PLUS is constructed and inspected according to the relevant guidelines and norms for electronic instruments (see chapter 7 TECHNICAL DATA).

It left the factory in a safe and secure technical condition.

### Function and operational safety

The failure-free function and operational safety of the MIQ/CHV PLUS is only guaranteed if the generally applicable safety measures and the special safety instructions in this operating manual are followed during its use.

The failure-free function and operational safety of the MIQ/CHV PLUS is only guaranteed under the environmental conditions that are specified in chapter 7 TECHNICAL DATA.

### Safe operation

If safe operation is no longer possible, the MIQ/CHV PLUS must be taken out of operation and secured against inadvertent operation. Safe operation is no longer possible if the MIQ/CHV PLUS:

- has been damaged in transport
- has been stored under adverse conditions for a lengthy period of time
- is visibly damaged
- no longer operates as described in this manual.

If you are in any doubt, contact the supplier of your MIQ/CHV PLUS.

## 3 Installation

### 3.1 Scope of delivery

The following parts are included in the scope of delivery of the MIQ/CHV PLUS:

- MIQ/CHV PLUS
- 2 x screwed cable glands with seals and blind plugs
- 2 x ISO blind nuts M4
- 2 x cheese-head screws M4x16 with plastic washer
- 1 x contact base
- 2 x plastic tapping screws for fixing the contact base
- 1 x hose clip
- Operating manual.

### 3.2 Software requirements

#### System 182 (XT)

Operation of the MIQ/CHV PLUS in the System 182 (XT) requires a software version of 3.15 or higher on the DIQ/S 182 Universal Transmitter.

#### System 2020 XT

Usage of the *Sensor-controlled* function with the system 2020 XT requires a controller software version of 2.80 or higher.



#### Note

It is possible to update the software if your components have older software versions. Please contact YSI.

### 3.3 Mounting for use in the IQ SENSOR NET

The IQ SENSOR NET provides a number of options for integrating the MIQ/CHV PLUS mechanically and electrically in the system (stacked mounting, distributed mounting, etc.). The individual types of installation are described in detail in the INSTALLATION chapter of the system operating manual.

### 3.4 Connecting the valve control line

**Note**

The valve control line must be connected if the valve is not controlled via the IQ SENSOR NET system.

**Warning**

The valve circuit must not supply any unauthorized voltages or currents. It has to be made sure that the circuit at any time meets all requirements of a *Limited circuit* or *Limited Power* as well as of *SELV* (Safety Extra Low Voltage). For more details, see chapter 7 TECHNICAL DATA.

**General installation instructions**

Observe the following instructions when attaching connecting wires to the terminal strip:

- Shorten all the wires used to the length required for the installation.
- Basically, fit all stranded wire ends with wire end sleeves before connecting them to the terminal strip.
- Any wires that are not used and project into the housing must be cut off as closely as possible to the cable gland.

**Materials required**

- Wire end sleeves, suitable for the connecting wires, with suitable crimping tool
- 1 x cable gland with sealing ring (scope of delivery MIQ/CHV PLUS)

**Tools**

- Cable stripping knife
- Wire stripper
- Phillips screw driver
- Small screw driver

**Warning**

**Danger of injury from lines that are under pressure. The compressed air glands in the housing may only be opened by a service technician authorized by YSI.**

**Connecting the control line to the terminal strip**

1 | Open the module.

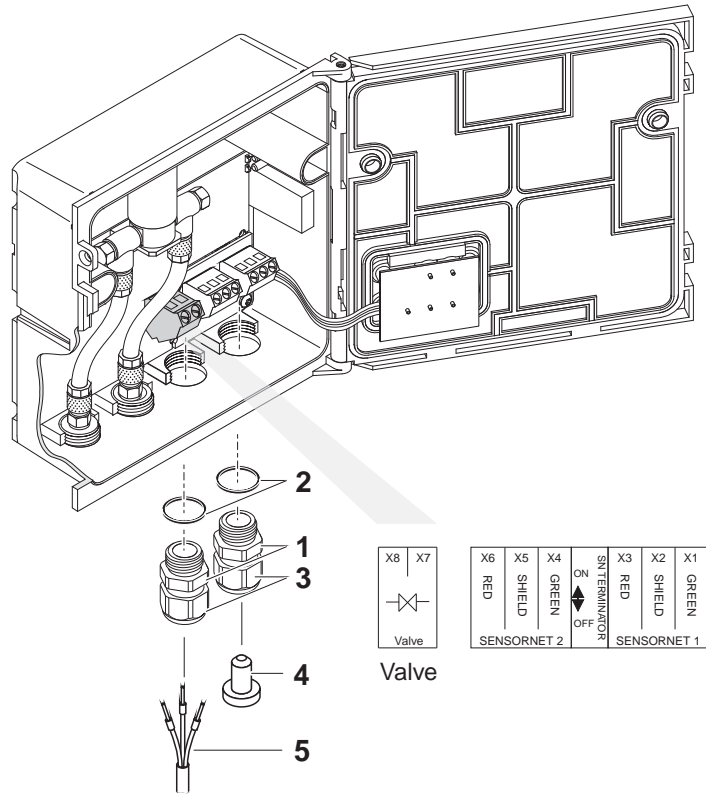


Fig. 3-1 Clamping termination for the valve control line

- 2 | Screw the cable gland (pos. 1 in Fig. 3-1) with the sealing ring (pos. 2) into the left connection opening.
- 3 | Loosen the coupling ring (pos. 3 in Fig. 3-1).
- 4 | Feed the valve control line through the left cable gland in the module housing.
- 5 | Connect the wires of the valve control line (pos. 5 in Fig. 3-1) to the clamping termination for the valve control line. While doing so, pay attention to the specifications on the label located under the terminal strip.
- 6 | Tighten the coupling ring (pos. 3 in Fig. 3-1).



**Caution**

No free wires must be allowed to project into the enclosure. Always cut off any wires that are not in use as closely as possible to the cable gland.

7	Close the module.
8	Screw a cable gland with sealing ring into the free opening and close it with the enclosed blind plug (pos. 4 in Fig. 3-1) if it is not used.
9	Tighten the coupling ring (pos. 3 in Fig. 3-1).

### 3.5 Connecting the compressed air hoses

#### General instructions

Pay attention to the following instructions when connecting the compressed air hoses (they can be connected either way round):

- Follow the specification of the compressed air according to chapter 7 TECHNICAL DATA.
- Only use hoses that match the compressed air connections.
- Secure all hose connections with hose clips.

#### Open the compressed air line

Pay attention to the following instructions if you want to open the compressed air line ( e.g. during a modification):



#### Warning

**Danger of injury from lines that are under pressure. Before opening the compressed air line, ensure that the section of line concerned is free of pressure. The compressed air glands in the housing may only be opened by a service technician authorized by YSI.**

### 3.6 Function check

#### General instructions

This check is also suitable for the troubleshooting of malfunctions.

If the valve is not controlled via the IQ SENSOR NET system, the valve control line must be connected.

To check that the valve triggers correctly, proceed as follows:



#### Warning

**Danger of injury from lines that are under pressure. The compressed air glands in the housing may only be opened by a service technician authorized by YSI.**

1	<p><u>MIQ/CHV PLUS + IQ SENSOR NET:</u> Put the IQ SENSOR NET system into operation.</p> <p><u>MIQ/CHV PLUS + measuring transmitter:</u> Supply the power supply module with voltage and put the measuring transmitter into operation.</p>
2	<p>Adjust the cleaning intervals on the measuring system so that the valve opens.</p> <p>or</p> <p>Open the valve in the <i>Valve function</i> menu with the <i>Manual control</i> function (see section 4.4.3).</p>
3	<p>Check whether there is a compressed air stream on the MIQ/CHV PLUS.</p>





## 4 Settings

The MIQ/CHV PLUS module has a valve output. The MIQ/CHV PLUS valve module registers on the IQ SENSOR NET system as a valve output (V) and appears in the list of outputs.

On the terminal or Universal Transmitter, you can

- assign a name to the valve output (with the 2020 XT systems only, see section 4.1).
- link the valve output to a sensor (see section 4.2)
- erase the link of the valve output with a sensor (see section 4.3)
- set the valve output (see section 4.4)
- check the state of the valve output (see section 4.5)



### Note

The general operating principles are given in the system operating manual or in the component operating manual of the terminal components.

### Functions for the valve output (see section 4.4)

You can set the following functions for the valve output:

- *Cleaning*  
(Setting of the cleaning procedure in the menu, *Settings of outputs and links*)
- *Sensor-controlled*  
(Setting of the cleaning procedure in the menu, *Settings of sensors and diff. sensors* of the relevant sensor)
- *Manual control*

#### 4.1 Entering / editing the name of an output

For easier identification of the outputs, an individual name can be given to each output in the *Edit list of outputs* overview. This option is available with the 2020 XT system only.

1	Open the <i>Settings</i> menu with <b>S</b> .
2	Using <b>←</b> and <b>OK</b> , select and confirm the menu item, <i>System settings</i> -> <i>Edit list of outputs</i> . The <i>Edit list of outputs</i> display opens.
3	Highlight a name in the <i>Name</i> column with <b>↑</b> and confirm with <b>OK</b> .








Terminal 1	15 May 2001	14:53			
Edit list of outputs					130
D01	MIQCHV PL/VU1	99200001	<b>08</b>		
Select character <b>←</b> , confirm character <b>OK</b>					




Fig. 4-1 130 - Edit list of outputs

4	Select a letter, a numeral or a special character with <b>↑</b> and confirm with <b>OK</b> .
5	Complete the name of the output and confirm with <b>OK</b> .

## 4.2 Linking the output with a sensor

The following steps describe operation with the 2020 XT system. With the System 182 (XT), the valve output of the MIQ/CHV PLUS can be found directly under the *Settings* menu (see system operating manual of the DIQ/S 182).

- 1 Open the *Settings* menu with .
- 2 Using  and , select and confirm the menu item, *System settings* -> *Settings of outputs and links*. The *Settings of outputs and links* display opens.
- 3 Highlight the column with  and confirm with .
- 4 Highlight an output with  and confirm with . The *Link with...* display opens. The display shows a list of the sensors to which a link is possible.

Terminal 1				01 Jan 2001 00 00				  			
Link with...											
No.	Sensor name	Measuring range									
S01	01341000	02	0.0 ... 60.0 mg/L								
S03	99160001	pH	0..14								



Select sensor , confirm 

Fig. 4-2 150 - Settings of outputs and links: Link with...

- 5 Select a sensor with  and confirm with . The output is linked with the selected sensor.



### Note

Outputs that are linked with sensors can be identified in the *Ser. no.* field of the *Settings of outputs and links* overview by the specification of the linked sensor.

### 4.3 Deleting a link with an output

If a link of a valve output with a sensor is no longer required, the link can be deleted.

The following steps describe operation with the 2020 XT system. With the System 182 (XT), the valve output of the MIQ/CHV PLUS can be found directly under the *Settings* menu (see system operating manual of the DIQ/S 182).

- 1 Open the *Settings* menu with **S**.
- 2 Using **⏪** and **OK**, select and confirm the menu item, *System settings* -> *Settings of outputs and links*.  
The *Settings of outputs and links* display opens.
- 3 Highlight the column with **⏪** and confirm with **OK**.
- 4 Highlight an output with **⏪** and confirm with **OK**.

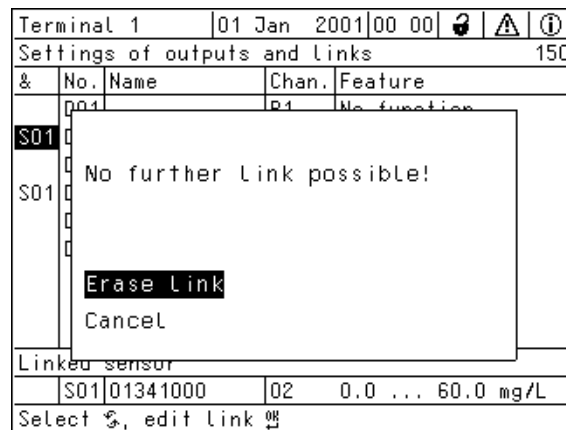


Fig. 4-3 150 - Settings of outputs and links: Erase link

- 5 Select *Erase link* with **⏪** and confirm with **OK**.  
A security prompt appears.
- 6 Select *Erase link* with **⏪** and confirm with **OK**.  
The link is deleted.

#### 4.4 Setting the valve output

The following steps describe operation with the 2020 XT systems. With the System 182 (XT), the valve output of the MIQ/CHV PLUS can be found directly under the *Settings* menu (see system operating manual of the DIQ/S 182).

1	Call up the measured value display with <b>(M)</b> .
2	Open the <i>Settings</i> menu with <b>(S)</b> .
3	Highlight the <i>Settings of outputs and links</i> menu item with <b>(↻)</b> and confirm with <b>(OK)</b> . The <i>Settings of outputs and links</i> display appears.
4	Highlight the <i>Feature</i> column with <b>(↻)</b> and confirm with <b>(OK)</b> .
5	Highlight a line for the valve output (Cx) in the <i>Feature</i> column with <b>(↻)</b> and confirm with <b>(OK)</b> . The <i>Settings of outputs and links</i> display opens.
6	Highlight the <i>Valve function</i> menu item with <b>(↻)</b> and confirm with <b>(OK)</b> .

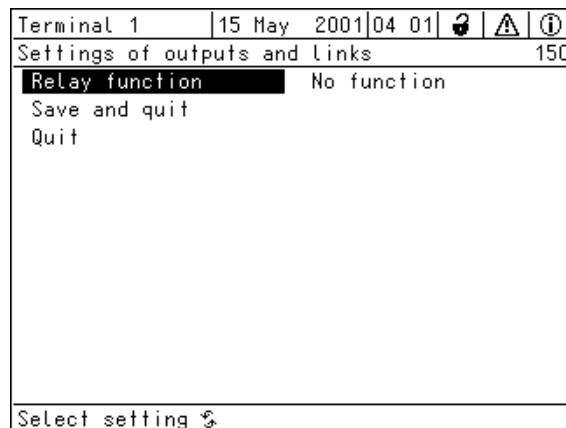






Fig. 4-4 150 - Settings of outputs and links

7	Select one of the functions in the following list with <b>(↻)</b> and confirm with <b>(OK)</b> .
---	--

Function	Description
<i>No function</i>	The valve output is not used.
<i>Cleaning</i>	see section 4.4.1
<i>Sensor-controlled</i>	see section 4.4.2
<i>Manual control</i>	see section 4.4.3

8	Carry out the settings for the relay outputs with  and  .
9	Highlight and confirm <i>Save and quit</i> with  and  . The new settings are stored.

#### 4.4.1 Cleaning

**Function**

The *Cleaning* function enables to start the sensor cleaning function automatically and time-controlled. The valve switches on or off the compressed air for the CH sensor cleaning head.

In order to set up the *Cleaning* function for a valve output, the valve output must be linked with a sensor (see section 4.2).

The cleaning cycle consists of *Cleaning duration* and *Adjustment time*.

During the cleaning cycle the *Clean* display for the sensor that is being cleaned flashes. The outputs linked with this sensor are frozen. The maintenance condition is active.

After the *Cleaning duration*, the relay is opened. During the following *Adjustment time* the outputs remain blocked.

The outputs linked with this sensor are only released when the cleaning cycle is completed. The *Clean* display disappears. The maintenance condition is finished.

**Testing the operativeness**

You can test the operativeness of the cleaning system as follows: manually open or close the valve with the *Manual control* function (see section 4.4.3) and, while doing so, check the behavior of the cleaning system.

Alternatively, you can test the operativeness of the cleaning system by checking the performance of the function at the start time set up (reference time ± interval). To perform a test immediately, you can set the reference time so that the next cleaning cycle will start in a few minutes (settings: see following table).

Settings	Setting	Selection/Values	Explanation
	<i>Reference time (h)</i>	0 ... 23 h	Time at which a cleaning cycle is started. Further cleaning cycles will be performed at the times specified by the cleaning interval.
	<i>Reference time (min)</i>	0 ... 60 min	
	<i>Interval unit</i>	1 .. 7 d 1 .. 24 h 5 .. 60 min	Selection of range and unit for the <i>Cleaning interval</i> .
	<i>Cleaning interval</i>	1/2/3/4/5/6/7 d  or: 1/2/3/4/6/8/12/24 h  or: 5/10/15/20/30/60 min	Repeat interval for the cleaning function: Time between the start time of a cleaning cycle and the start time of the next cleaning cycle*.
	<i>Cleaning duration</i>	0 ... 300 s	Duration of the cleaning
	<i>Adjustment time</i>	0 ... 900 s	Time extension to allow the sensor to adjust to the test sample after cleaning.

\* With short *cleaning intervals*, the adjustable values for the *Cleaning duration* and *Adjustment time* are limited. The following values apply:

<i>Cleaning interval</i>	<i>Cleaning duration</i>	<i>Adjustment time</i>
≤ 10 min	max. 60 s	max. 120 s
≤ 20 min	max. 180 s	max. 300 s



**Note**

With this, the cleaning times are fixed. They only change when the *reference time* is changed.



**Note**

The reference time and all further cleaning times relate to the date and time of the system clock. How to set the system clock is described in the system operating manual.

**Example**

Setting		Result
Reference time (h):	12	Reference time: 12:00 hours
Reference time (min):	0	This specifies the following
Interval unit:	Hours (h)	start times:
Cleaning interval:	8 h	04:00, 12:00 and 20:00 hours

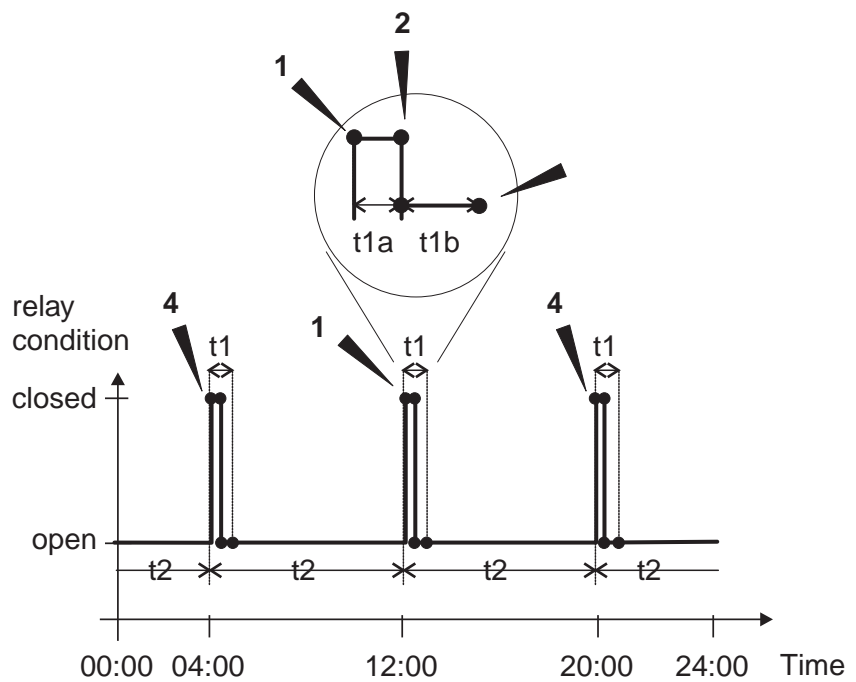



Fig. 4-5 Cleaning cycle

1	Reference time Start of a cleaning cycle (t1) Start of the specified <i>Cleaning duration</i> (t1a)
2	End of the specified <i>Cleaning duration</i> (t1a) Start of the specified <i>Adjustment time</i> (t1b)
3	End of the specified <i>Adjustment time</i> (t1b) End of the cleaning cycle (t1)
4	Reference time ± <i>Cleaning interval</i> (t2) Start of a cleaning cycle
t1	Cleaning cycle = <i>Cleaning duration</i> (t1a) <i>Adjustment time</i> (t1b) Linked outputs are frozen.
t2	<i>Cleaning interval</i>



### Canceling the cleaning

A running cleaning cycle is canceled:

- Automatically
  - If the sensor switches to the inactive condition during the cleaning cycle
- Manually
  - By pressing 
  - By switching on the maintenance condition

Each time the cleaning cycle is canceled, the valve closes immediately.

If the cleaning cycle is canceled automatically, the outputs linked to the sensor are released immediately.

If the cleaning cycle is canceled manually, the sensor is in the maintenance condition. The linked outputs are only released after the maintenance condition was terminated manually.

The next cleaning cycle will be performed at the time set up.



#### Note

The valve closes in the case of power failure. The cleaning cycle is canceled. As soon as power is available again the next cleaning cycle takes place at the specified time.

#### 4.4.2 *Sensor-controlled*

With the *Sensor-controlled* function, the valve is controlled by a linked sensor. A sensor (or connection module) is required that sends signals to prompt a cleaning cycle, e.g. the MIQ/VIS connection module for UV/VIS sensors.



#### Note

Set the cleaning process in the setting table of the respective sensor.

#### 4.4.3 *Manual control*

**Function**

With the *Manual control* function you can check the operability of the valve. To do so, close or open the valve manually and, while doing so, check the behavior of the connected cleaning head.

Setting	Selection/Values	Explanation
<i>Valve function</i>	<i>Manual control</i>	The selected valve action is carried out with <i>Save and quit</i> .
<i>Action</i>	<i>Open</i> <i>Close</i>	

**Note**

The settings for other functions in the *Valve function* menu are retained while the *Manual control* function is carried out.

## 4.5 Checking the status of the outputs

This function offers a simple overview of the states of all outputs.

The *open* or *closed* state is displayed for each valve.

With the System 182 XT, you can recall the states of the outputs via the measured value and status display (see system operating manual of the DIQ/S 182 XT).

With the 2020 XT system, the function, *Status of output channels*, in the menu, *Settings/Service/List of all components* can be accessed as follows:

1	Call up the measured value display with (M).
2	Open the <i>Settings</i> menu with (S).
3	Highlight the <i>Service</i> menu item with (↑) and confirm with (OK). The <i>Service</i> dialog box opens.
4	Highlight the <i>List of all components</i> menu item with (↑) and confirm with (OK). The <i>List of all components</i> dialog box opens.
5	Select the required component (column <i>Model</i> , entry <i>MIQCHV PL</i> ) with (↑) and confirm with (OK). The <i>Status of output channels</i> window opens.

Terminal PC	15 May 2001	14 53	🔒	⚠	ℹ
Status of output channels					394
No.	Name	Chan.	Status		
D01		U1	closed		
Return ESC					

Fig. 4-6 394 - Status of output channels

6	Using (M) or (ESC), exit the <i>Status of output channels</i> window.
---	---



## 5 Maintenance and cleaning

### 5.1 Maintenance

The MIQ/CHV PLUS requires no special maintenance.

### 5.2 Cleaning

#### **MIQ modules**

Clean modules mounted in the open of gross contamination as necessary. We recommend to clean the worst of the dirt on the module and the area around it each time before opening in order to prevent gross contamination from entering the open enclosure.

To clean the module, wipe the enclosure surfaces with a damp, lint-free cloth. If compressed air is available on site, blow off the worst of the dirt beforehand. Keep the enclosure closed while doing so.



## 6 What to do if ...

### No compressed air at the output

Cause	Remedy
– Compressed air supply interrupted or too weak	– Check the compressed air supply
– Supply voltage not present or too low	<u>IQ SENSOR NET:</u> – See the chapter, WHAT TO DO IF... in the system manual
– Error in triggering	– Perform the function check according to section 3.6. – If the valve does not switch, check the control <ul style="list-style-type: none"> <li>– loose clamping connection</li> <li>– broken control line</li> <li>– defective relay output</li> <li>– valve output was not linked with a sensor (see section 4.2)</li> <li>– incorrect setting of the linked valve output (see chapter 4)</li> </ul>





## 7 Technical data

### Dimensions

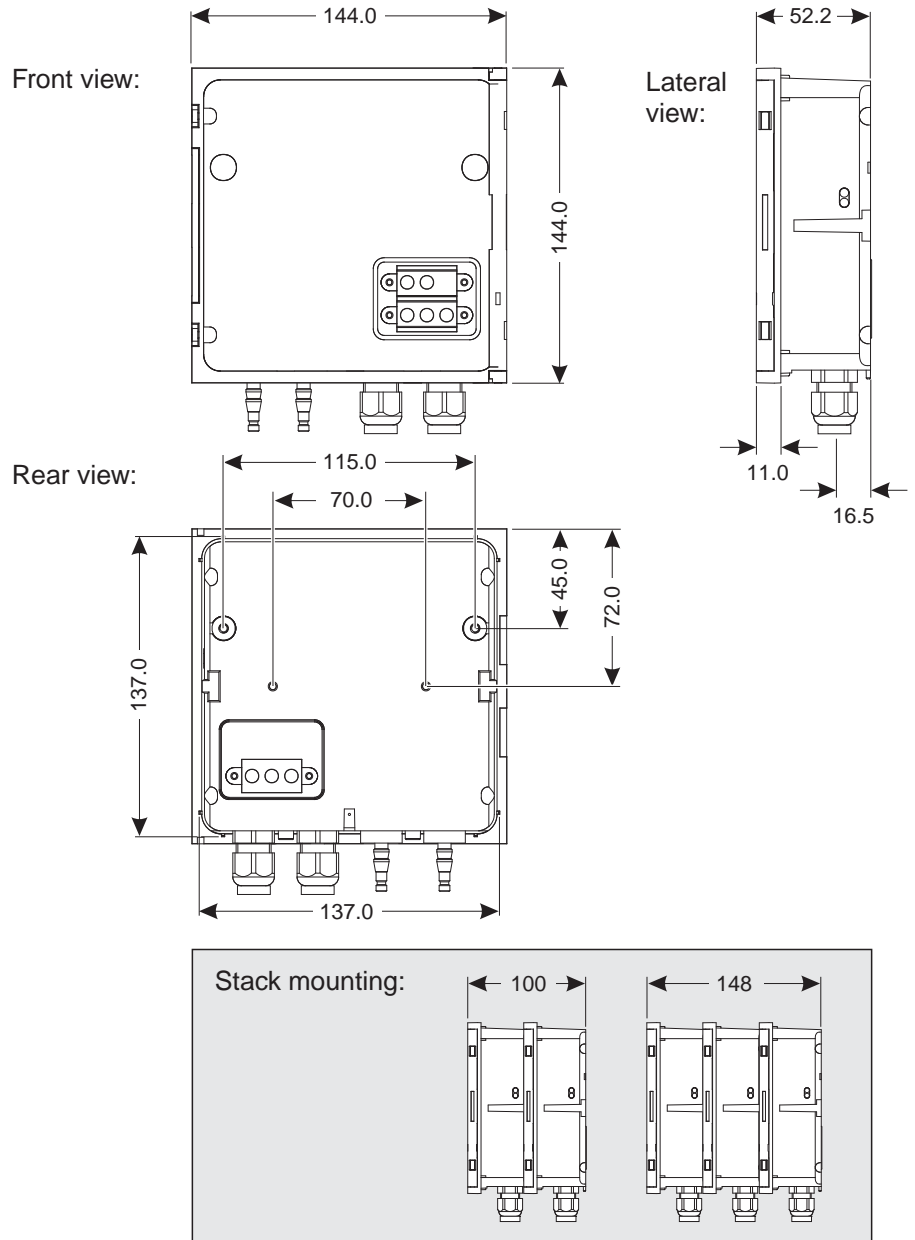


Fig. 7-1 Dimension drawing of the MIQ/CHV PLUS (dimensions in mm)

**Mechanical construction**

Maximum number of modules in a module stack	3 (plus a terminal component in the IQ SENSOR NET)
Materials	<ul style="list-style-type: none"> <li>- Housing: Polycarbonate with 20 % glass fiber</li> <li>- Pressure hose sleeves: POM</li> </ul>
Weight	Approx. 0.5 kg
Type of protection	<ul style="list-style-type: none"> <li>- IP 66</li> <li>- In accordance with NEMA 4X MIQ modules are not suitable for conduit connection</li> <li>- NEMA 3s</li> </ul>

**Ambient conditions**

**Temperature**

Operation	- 20 °C ... + 55 °C (- -4 ... 131 °F)
Storage	- 25 °C ... + 65 °C (- -13 ... 149 °F)

**Relative humidity**

Yearly average	≤ 90 %
Dew formation	Possible

**Electrical data**

Nominal voltage	<p>Max. 24 VDC via a separate power supply module.</p> <p><u>IQ SENSOR NET:</u> For details, see chapter TECHNICAL DATA of the IQ SENSOR NET system operating manual</p> <p>Suitable power supply modules:</p> <ul style="list-style-type: none"> <li>- MIQ/PS</li> <li>- MIQ/24V</li> </ul>
Power consumption	Approx. 1 W
Protective class	III

<b>Instrument safety</b>	Applicable norms	– EN 61010-1
<b>EMC product and system characteristics</b>	EN 61326	EMC requirements for electrical resources for control technology and laboratory use <ul style="list-style-type: none"> <li>– Interference immunity according to EN 61326/A1 table A.1</li> <li>– Resources for industrial areas, intended for indispensable operation</li> <li>– Interference emission limits for resources of class B</li> </ul>
	System lightning protection	Noticeably extended qualitative and quantitative protective characteristics as opposed to EN 61326/A1 table A.1
	FCC, class A	
<b>Terminal connections</b>	IQ SENSOR NET connections	2 Additional connectable SENSORNET terminator (terminating resistor)  <u>Note:</u> If the valve is controlled via an external switch, only one SENSORNET connection can be used due to the limited number of cable glands. SENSORNET connection 1 or 2 can be selected.
	Valve switching contact	1
	Terminal type	Screw-type terminal strip, accessible by opening the lid
	Terminal ranges	Solid wires: 0.2 ... 4.0 mm <sup>2</sup> AWG 24 ... 12 Flexible wires: 0.2 ... 2.5 mm <sup>2</sup>
	Cable feeds	Cable glands M16 x 1.5 on the underside of the module

**Valve circuits**

Switching voltage	Approx. 12 V
Max. switching current	Approx. 70 mA



**Warning**

The valve circuit must not supply any unauthorized voltages or currents. It has to be made sure that the circuit at any time meets all requirements of a *Limited circuit* or *Limited Power* as well as of *SELV* (Safety Extra Low Voltage). These include the following limiting value specifications:

- AC voltage: max. 30 V effective / 42.4 V peak
- DC voltage: max. 60 V
- Current limit: max. 8 A
- Power output limitation: max. 150 VA

**Compressed air**

Required air quality	Dry, dust-free and oil-free
Operating pressure	Max. $7 \times 10^5$ Pa (7 bar) absolute
Connections	6 mm hose nozzles

## 8 Indexes

### 8.1 Explanation of the messages

In this chapter you will find a list with all the message codes and corresponding message texts that may occur in the log book of the IQ SENSOR NET system for the MIQ/CHV PLUS output module.



#### Note

Information about

- Contents and structure of the log book and
- Structure of the message code

can be found in the LOG BOOK chapter of the IQ SENSOR NET system operating manual.



#### Note

All message codes of the MIQ/CHV PLUS output module end with the number, "432".

#### 8.1.1 Error messages

##### Message code

EI2432

##### Message text

*Operational voltage too low, no operation possible*

*\* Check installation and cable lengths, Follow installation instructions*

*\* Power unit(s) overloaded, add power unit(s)*

*\* Defective components,  
replace components*

*\* Defective components,  
replace components*

#### 8.1.2 Informative messages

The MIQ/CHV PLUS output module does not send any informative messages.



## 9 Contact Information

### 9.1 Ordering & Technical Support

Telephone: (800) 897-4151  
(937) 767-7241  
Monday through Friday, 8:00 AM to 5:00 PM ET

Fax: (937) 767-1058

Email: [environmental@ysi.com](mailto:environmental@ysi.com)

Mail: YSI Incorporated  
1725 Brannum Lane  
Yellow Springs, OH 45387  
USA

Internet: [www.ysi.com](http://www.ysi.com)

When placing an order please have the following information available:

YSI account number (if available)	Name and Phone Number
Model number or brief description	Billing and shipping address
Quantity	Purchase Order or Credit Card

### 9.2 Service Information

YSI has authorized service centers throughout the United States and Internationally. For the nearest service center information, please visit [www.ysi.com](http://www.ysi.com) and click 'Support' or contact YSI Technical Support directly at 800-897-4151.

When returning a product for service, include the Product Return form with cleaning certification. The form must be completely filled out for an YSI Service Center to accept the instrument for service. The Product Return form may be downloaded at [www.ysi.com](http://www.ysi.com) and clicking on the 'Support' tab.





## 10 Accessories and options

Description	Model	Order no.
Cleaning head for online sensors with 40 mm diameter	CH	900 107Y
Tubing set, comprising: <ul style="list-style-type: none"> <li>– 15 m compressed-air hose</li> <li>– 1 quick disconnect coupler, complete</li> <li>– 2 hose clips</li> <li>– Teflon tape</li> </ul>	CH/Epack	900 111Y
Long-range power supply for 100-240 VAC nominal input voltage	MIQ/PS	480 004Y
Power supply for 24 V AC/DC nominal input voltage	MIQ/24V	480 006Y
IQ SENSOR NET cable - please specify required length in m when ordering	SNCIQ	480 046Y
	SNCIQ/UG	480 047Y
Sun shield for a unit of up to three stacked MIQ modules	SSH/IQ	109 295Y
Sun shield for a unit of up to two stacked MIQ modules	SD/K 170	109 284Y
Mounting kit for fixing the SD/K 170 sun shield on horizontal or vertical pipes	MR/SD 170	109 286Y
Kit for wall mounting of a MIQ module	WMS/IQ	480 052Y
Set for panel mounting of MIQ modules; Panel aperture 138 x 138 mm according to DIN 43700 or IEC 473	PMS/IQ	480 048Y
Set for mounting of MIQ modules on a 35 mm top hat rail according to EN 50022	THS/IQ	480 050Y







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